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ABSTRACT

Five research studies on teacher planning are reviewed to discover how basic descriptive research can inform the practice. Seven findings are discussed: (1) Planning is important to teachers and generally invisible to everyone else; (2) Planning differs in practice from traditional prescriptions for planning; (3) Planning during the first weeks of school has long range effects; (4) Teacher planning transforms curriculum into instruction; (5) Routines increase teacher efficiency and flexibility; (6) Communicating plans puts thought into action; and (7) Teacher reflection aids teacher development. (Author/CJ)

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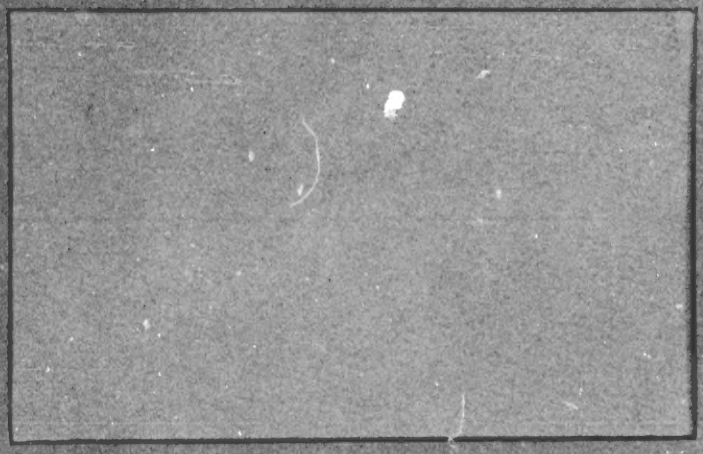

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THE HIDDEN WORLD OF TEACHING:

IMPLICATIONS OF RESEARCH ON TEACHER PLANNING

Christopher M. Clark and Robert J. Yinger

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Institute for Research on Teaching

Teachers' thoughts and decisions are the focus of studies currently under way at Michigan State University's Institute for Research on Teaching (IRT). The IRT was founded in April 1976 with a $3.6 million grant from the National Institute of Education. That grant has since been renewed, extending IRT's work through September 1981. Funding is also received from other agencies and foundations. The Institute has major projects investigating teacher decision-making, including studies of reading diagnosis and remediation, classroom management strategies, instruction in the areas of language arts, reading, and mathematics, teacher education, teacher planning, effects of external pressures on teachers' decisions, socio-cultural factors, and teachers' perceptions of student affect. Researchers from many different disciplines cooperate in IRT research. In addition, public school teachers work at IRT as half-time collaborators in research, helping to design and plan studies, collect data, and analyze results. The Institute publishes research reports, conference proceedings, occasional papers, and a free quarterly newsletter for practitioners. For more information or to be placed on the IRT mailing list please write to : The IRT Editor, 252 Erickson, MSU, East Lansing, Michigan 48824.

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Abstract

The authors stand back a bit from the five studies they have done on teacher planning and the literature they have reviewed to ask themselves, "What does it all mean?" They believe research can inform practice by providing a deeper understanding of what teachers do and how their strategies work. They found that (1) planning is important to teachers and generally invisible to everyone else, (2) planning in practice differs from traditional prescriptions for planning, (3) planning during the first weeks of school has long-term effects, (4) teacher planning transforms curriculum into instruction, (5) routines can increase teacher efficiency and flexibility, (6) communicating plans puts thought into action, and (7) teacher reflection aids teacher development. These findings have implications for such areas of practice as professionalism in teaching, timing and nature of the practicum experience, planning styles, the role of the principal, and more.

Give me a firm place to stand, and I will move the earth.

On the Lever

Archimedes

A glimpse at this "hidden" side of teaching may increase our understanding of some of the more visible and well-known features of the process.

The Way Teaching Is

Philip Jackson (1966, p.12)

THE HIDDEN WORLD OF TEACHING:

IMPLICATIONS OF RESEARCH ON TEACHER PLANNING[1]

Christopher M. Clark and Robert J. Yinger[2]

Since 1977, we have pursued a program of research on teacher planning sponsored by the Michigan State University Institute for Research on Teaching. Although we think of this work as basic research, we acknowledge our responsibility to relate both the processes and products of our inquiry to practical issues in teaching and teacher education. This paper is our first attempt to stand back a bit from the details of the five studies we have done (Yinger, 1979, 1980; Clark & Elmore, Note 1; Clark & Yinger, Note 2; Yinger, Note 3), and from the modest body of literature on teacher planning that we have reviewed (Clark & Yinger, 1977) to ask "What does it all mean?"

Our orientation to research on teaching (one that is shared by many of the projects at the Institute for Research on Teaching) is called the cognitive information-processing approach (Clark, 1979; National Institute of Education, Note 4). This research centers upon the basic psychological processes thought to occur in a teacher's mind that organize and direct his or her behavior both prior to and during interactive teaching. Given the complexity of the teaching situation, the implied model of teaching

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[1]An earlier version of this paper was presented at the annual meeting of the American Educational Research Association, Boston, 1980.

[2]Christopher M. Clark is the coordinator of IRT's Teacher Planning Project and a professor of educational psychology at MSU. Robert J. Yinger is a senior researcher with the Teacher Planning Project and a professor of educational psychology at The University of Cincinnati. The authors wish to express their appreciation to Robert Katterns, who read and commented on a draft of this paper, and to Patricia Marshall for assistance in manuscript preparation.

in our research is that the teacher, like any other intelligent and rational agent, deals with this complexity by simplifying it in some rational and adaptive way. In the language of cognitive psychology, the teacher enters a complex *task environment* and simplifies it by defining part of it as the *problem space* within which he or she will work. The judgment and decision-making processes that affect how a teacher simplifies and organizes a classroom are central to our interests. These basic processes have been investigated in the psychology laboratory, but have not been thoroughly studied in realistic and complex school settings.

The basic psychological processes of teacher judgment and decision-making do not operate in a vacuum. Researchers using the cognitive information-processing approach must attend to the psychological, ecological, and social contexts in which basic processes are embedded. The psychological context for teacher judgment and decision-making is made up of the teacher's implicit theories, beliefs, and values about teaching and learning. The ecological context includes all of the resources, external circumstances, administrative requirements, and the like that limit, facilitate, and shape teacher and student thought and action. And the social context refers to the collective and interactive properties of the classroom group both internally and as it relates to larger communities.

In looking for naturally-occurring circumstances in which teacher judgment and decision-making might be seen in action, we have been led to investigate teacher planning. The various kinds of planning that are undertaken by teachers provide opportunities to study how teachers' thoughts are translated into action in the classroom, in particular, how teacher actions reflect the psychological, ecological, and social contexts for decision-making.

Having stated our purpose and laid out some of the assumptions that guide our inquiry, in the remainder of this paper we address three topics:

1. the issue of how basic descriptive research on teaching can inform practice;
2. a brief overview of our research questions and methods; and
3. seven findings from our research and our ideas about what they imply for practice.

Research Into Practice

One of the most difficult challenges faced by researchers on teaching is how to make the results of their work relevant to teaching and teacher education. In the case of correlational or experimental research, this problem is usually characterized as one of generalizability for the findings. The goal of this kind of research is to discover general principles or law-like statements about the relationship between teaching and learning that will apply across many different settings. Eventually, researchers hope to combine these laws of teaching and learning with a prescriptive theory of teaching which will help predict and control school learning.

Experimental and correlational research on teaching have already had effects on the practice of teacher education, most notably in the context of competency-based teacher training. But researchers are still very far from the theoretically attainable prescriptive theory of teaching, in part because of the difficulty of replicating research findings and in part because of the enormous differences between classrooms. It has even been suggested (Cronbach, 1975) that a generalizable prescriptive theory of instruction is an impossible goal because factors unique to each teaching-learning situation (and interactions between these factors) are powerful enough to produce numerous exceptions to every proposed law.

What Role for Descriptive Research?

Descriptive research on teaching, including our work on teacher planning, is not a search for general laws. The principal goal of descriptive research is understanding why a particular teaching situation is the way that it is, rather than prediction or control. Understanding is pursued through careful and complete description of teaching-learning situations, in terms that make sense to the participants. Descriptive research is not intended to be the handmaiden of correlational and experimental work, as has been suggested by Rosenshine and Furst (1973). Descriptive research is not a search for "variables" to be manipulated in subsequent experimental studies. Rather, it is an attempt to find out both what is going on out there and how it works in particular situations.

One might argue against this approach by stating that what "is" in teaching is not necessarily what "should be." We are not in opposition to this position. However, we believe that it is important to examine and describe the behavior of experienced and successful practitioners who have developed methods and strategies for functioning effectively in the teaching environment. Furthermore, our stance is that models of teaching based on what is *possible* in the classroom will in the long run be more effective than models borrowed from other fields (e.g., medicine, counseling, cybernetics) that are too difficult and complex or simply inappropriate for most classroom teachers to implement.

Like Good and Power (1976), we hold that classroom research need not yield rigorous prescriptions in order to be of value to teachers and teacher educators:

> We suspect that the generalizations derived from classroom research and theory have a different role from those of the natural sciences. They function not as predictors of future events but as guidelines for understanding particular situations and contexts. Thus, at best, generalizations about teaching derived from research act as guides to assessing the likely consequences of alternative strategies in complex educational situations. Such generalizations must necessarily

> be indeterminate since they cannot predict precisely what will happen in a particular case. But this does not decrease their *value for the teacher;* he is not interested in establishing general laws. Theories can be of value in specifying those dimensions which are relevant to an understanding of classroom phenomena, can extend the range of hypotheses (alternative strategies) considered, and sensitize the teacher to the possible consequences of his actions (p. 47).

Theories, findings, and concepts derived from classroom research constitute a vital part of the raw material that teachers may use to describe, understand, and influence events in their own unique classroom situations. We hold that teachers should be helped to think from theory and research but not be controlled by them. Or, in Philip Jackson's words:

> Customarily, we speak of putting theory *into* practice. But that is not what we do at all. We put theory, or whatever you want to call the ideas we transmit, into *practitioners,* where it may serve a wide variety of functions, only one of which is the actual guidance of their actions (Jackson, Note 5, p. 36).

The particular example of "theory into practitioners" that we address in this paper is the connection between, on the one hand, descriptive research on teacher planning and classroom behavior and, on the other, the practices of teaching and teacher education.

In our view, teacher education tries to provide at least four interrelated professional tools:

1. technical skills and strategies for instruction and management;
2. subject matter knowledge;
3. concepts and categories for seeing, understanding, and thinking about teaching and learning; and
4. a view or preview of what the profession is or could be like for the teacher -- a context for thinking about teaching and learning.

When we consider teacher education in this way, it seems to us that our descriptive research on teacher planning has something to offer

teacher education primarily in terms of the last two items, concepts and context for thinking about teaching. Our research has implications for technical skills and subject matter mastery only indirectly.

Teacher Planning

The mention of teacher planning brings to mind thoughts and images of outlines, plan books, objectives, textbooks, syllabi, and a variety of related products and activities. To accommodate this richness and variety, we have defined teacher planning very broadly to include any activity of a teacher that is concerned with organizing his or her school-related activities, or the activities of students, other teachers, aides, parent volunteers, and so on.

Planning may be formal, as when a teacher prepares a lesson plan or outline of a unit in science, or informal, including the usually invisible thinking that a teacher does while shopping, driving home from work, or eating lunch. As long as what a teacher is doing *aids in preparing a framework for guiding future action*, it counts as planning.

By defining teacher planning as we have, several important aspects of planning activity come to light.

First, planning is regarded as a process strongly oriented toward action rather than, for instance, knowledge acquisition or self-development; such action will most likely be visible to, and may involve other persons (e.g., team teachers, aides, reading specialists).

Second, the fact that planning is concerned with future action introduces the problems of uncertainty and unpredictability. Our knowledge of the future is scanty and the complexity of social interaction makes prediction in the classroom especially difficult. Planning thus requires making judgments and decisions using incomplete information. Prediction is as important in planning as careful organization of content, materials, and the like is.

The third aspect of planning activity embedded in our definition relates to how planning is accomplished. The process of preparing a framework for future action is accomplished through teacher thinking, decision-making, and judgment. Planning, when it is done well, requires significant intellectual effort, drawing on practical and theoretical knowledge and experience, and involves a wide range of mental activities, including predicting, guessing, weighing, restructuring, and visualizing.

Research on Planning

In this section we explicate the reasons that convinced us of the importance of studying teacher planning, the research questions that organize our research, and the methods that we have found to be useful in pursuing these questions.

Why Study Teacher Planning?

The study of teacher planning is an important research subject for four reasons. First, as we stated earlier, teacher planning is a promising topic in the study of teacher thinking and the relationship between thought and action in teaching. For example, a study by Peterson, Marx, and Clark (1978) indicated that teachers are more able to talk about their thoughts while planning for instruction than they are able to recall their thoughts while actually engaged in instruction. Second, teacher planning is a topic of concern to practitioners. To illustrate, teacher preparation time appears increasingly as an item in teacher contract negotiations; informal conversation with teachers and educational administrators indicates a conviction on their part that planning for instruction is a very important aspect of their work. Third, the study of

teacher planning may serve as a window to the pedagogical ideals of teachers. In describing plans for a lesson, week, unit, or term, and in comparing the actual implementation of a plan with the planned and hoped-for scenario, teachers may provide us with valuable insights about their implicit theories of teaching and learning as well as the criteria against which they evaluate their own and other teachers' performance. Fourth, research on teacher planning offers the possibility of acting as a link between research on curriculum and research on teacher behavior. These two bodies of research have developed relatively independently of one another, and neither approach has had the dramatic impact on improvement of practice once hoped for. By studying how teachers bring (or do not bring) curriculum and instructional performance together during their planning activities, we may be able to bridge the gap between them and eventually have a positive impact on the practice of teaching.

Research Questions

Teacher planning is a complex professional activity that takes many forms. As such, teacher planning constitutes a large and potentially rich research domain. One way to represent this domain is proposed in Figure 1, which we have used to generate research questions about influences on teacher planning, the process of planning, the products of the planning process, and about the eventual effects of teacher planning on students and on teachers themselves.

One important research topic is the factors that influence teacher planning. How do teacher characteristics, student characteristics, curriculum characteristics, and environmental factors combine to affect planning?

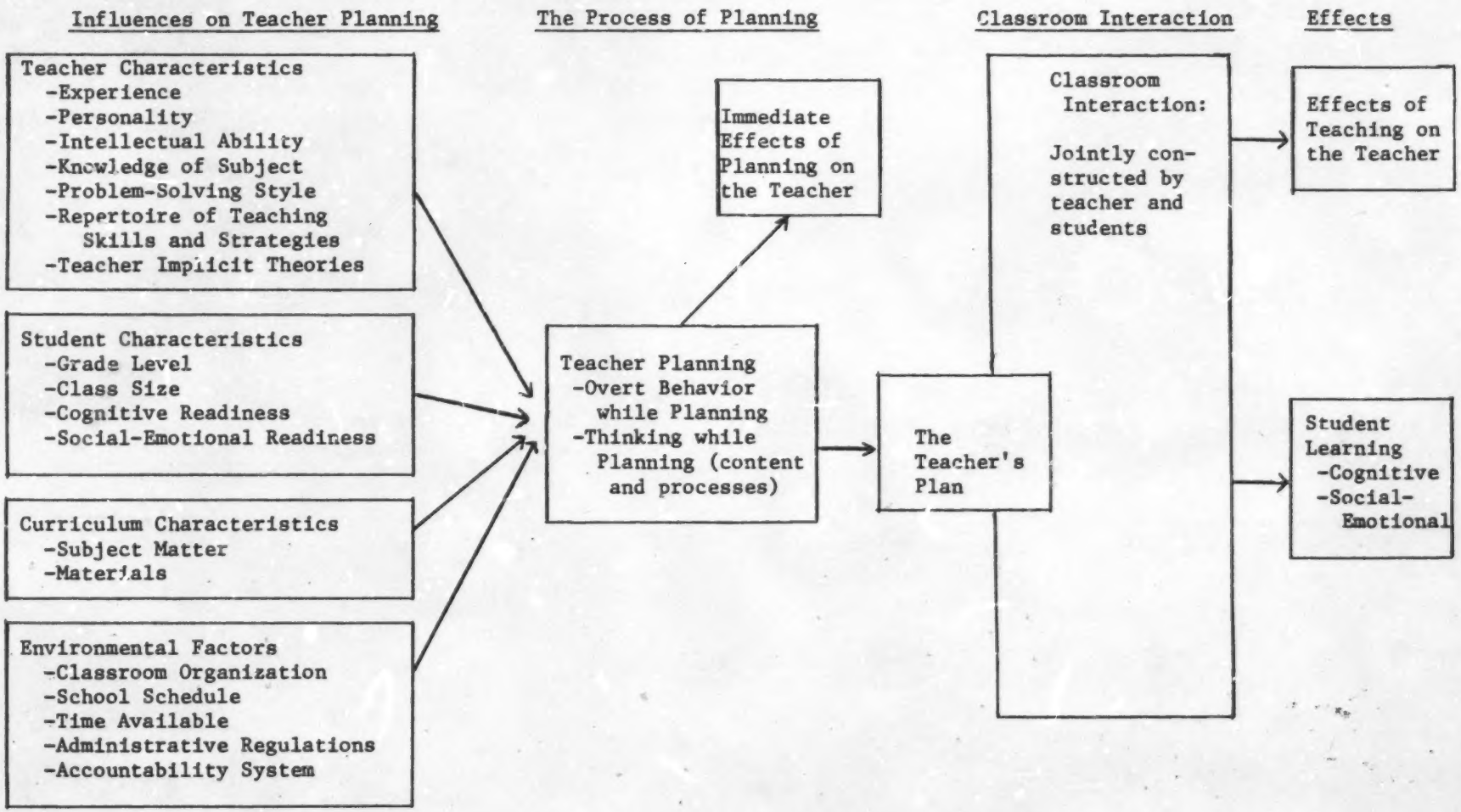

Figure 1. A model for research on teacher planning for instruction.

The overt and covert processes that occur during planning is another potential research topic. The effects of planning on the subsequent classroom interaction and on more long term outcomes are two other important research topics within this domain. In addition to addressing these topics individually, one could begin to explore the relationships between several topics. For instance, how do characteristics of teachers, students, curricula, and the environment affect the process of teacher planning for instruction? Or how do variations in planning processes affect subsequent classroom interaction?

To guide our inquiry we have grouped research questions under three major headings: the how of teacher planning, the why of teacher planning, and the relationship between teacher planning and teaching effectiveness.

The how of teacher planning. To answer the question "How do teachers plan?" we require descriptions of both observable teacher behavior and of teacher thought processes while planning. We are interested in the amount and distribution of time spent planning, settings in which planning takes place, the types of planning engaged in (with regard both to scope of the plan -- yearly, daily, and so on -- and to the differences between planning lessons for the first time compared with revision and adaptation of previously taught material), variety of the forms that plans take, resources used by teachers, sources of ideas, and differences in the focus of planning (e.g., focus on teacher verbal behavior compared with focus on student activity or teacher physical movement).

In exploring the psychology of planning, we need to know more about the psychological processes that teachers use while planning. How do judgment, visualization, memory, and tolerance of uncertainty contribute

to teacher planning? How do teachers vary in the number and variety of factors taken into account during planning? What roles do student characteristics play in teacher planning? Sociological factors such as teacher role definition, institutional press, peer expectations, and administrative regulations can also be hypothesized to shape and limit teacher planning behavior.

The why of teacher planning. In addressing the question "Why do teachers plan?" we are interested both in teachers' motives and goals (internal influences on teacher planning) and in external factors that influence teacher planning. Hypotheses we have entertained concerning teacher motives and goals for planning include the reduction of anxiety, insuring equitable treatment of all students, composition of a smooth script for action, increased subject-matter mastery, conformity to teacher role expectations, and compensation for the isolation of the self-contained classroom. What other motives and goals may lie behind teacher planning? What individual differences exist in the mixed and relative emphasis of these motivations for planning?

Among external influences on teacher planning we have considered curriculum materials, classroom and school organization, administrative requirements, accountability systems, and preservice and inservice training. In what ways do these and other factors external to the teacher influence the amount and kinds of teacher planning? What are the consequences of not planning or of poor planning? And how do the forces that influence and motivate teacher planning interact as the school year progresses and the social system of the classroom develops?

Teacher planning and teaching effectiveness. In this third focus of our research we are concerned both with teacher effectiveness in planning as an end in itself, and with the effects of teacher-planned classroom behavior on student outcomes. What criteria do teachers use for judging the completeness of a plan? What are the differences, in the eyes of teachers, between good plans and adequate plans? What is important to know before entering the classroom? What part do teacher expectations about students play? What is the relationship of a plan to subsequent interactive teacher thoughts and actions, and, through teacher actions, to effects on students?

Methods of Research

The cognitive information-processing approach to research on teaching is generally concerned with the mental processes that are thought to underlie behavior. For this reason, teachers' self-reports of their thought processes often constitute a main source of data (see, for example, Bussis, Chittenden, & Amarel, 1976; Peterson & Clark, 1978; Yinger, Note 3; Morine & Vallance, Note 6). We have obtained teachers' self-reports by traditional interview and questionnaire methods, by journal keeping, and by "think aloud" procedures in which a teacher is asked to verbalize all of his or her thoughts and decisions while they are taking place.

In addition to teacher self-reports of various kinds, observation is an important method of investigation in this approach. We have employed observations of two general types: participant observation, in which the observer participates in and becomes a part of the social phenomenon being studied, and non-participant observation, in which the observer attempts to be as unobtrusive and objective as possible. In the case of participant

observation, a technique borrowed from anthropology, the researcher attempts to enter the frame of reference of the participants in order to understand more completely their mental processes and the relation ships between these mental processes and action. Non-participant observation has been used to compare and contrast teaching activities that are planned with those that are actually carried out. Usually, non-participant observation is paired with one or more of the teacher self-report techniques described above.

In addition to teachers' self-reports and various kinds of observation techniques, we have borrowed methods from the psychological laboratory, especially policy-capturing techniques using the lens model of Egon Brunswick (Hammond, 1971; Rappoport & Summers, 1973). Attempts have also been made to develop complex process descriptions that model more specific decision-making behavior of teachers using techniques that have been successful in modeling other problem-solving behavior (Newell & Simon, 1972).

In general, the methods used in our research are phenomenological in nature. The teacher and the researcher often find themselves acting as their own instruments. There are few recognized tests of the validity or reliability of these procedures and techniques. The methods seem to have a persuasive face validity, especially to experienced practitioners. But much work remains to be done in developing, standardizing, and improving these tools for learning about the elusive mental lives of teachers.

Research Findings and Implications

Our program of research on teacher planning is quite young. Since 1977, we have done five small studies of teacher planning in elementary and middle school grades and reviewed the handful of other studies of planning

done elsewhere (Clark & Yinger, 1977, 1979; Clark & Elmore, Note 1). We are by no means ready to recommend a particular way of planning as superior, but we do have some preliminary findings that will be useful for thinking about effective teaching and how to encourage and support it. Before we address these findings specifically, we would like to make a few comments about teacher planning as a genuinely professional activity.

Herbert Simon (1969) argues that design is the principal mark of professional activity. Engineering, architecture, business, law, medicine, and education are all centrally concerned with the process of design, that is, the process of devising courses of action aimed at changing existing situations into preferred ones. A central theme of our research findings from the beginning of our research program (Yinger, Note 3) is that teacher planning might be best represented as an intuitive design process, rather than a rational decision-making process.

The situations teachers face in schools today often put more weight on the role of teacher as technician and manager rather than the more pedagogical role of designer and professional. The designer/professional aspects of a teacher's role are often hidden. Teacher planning is in reality the "hidden world of teaching."

Criticism of school effectiveness in producing desired outcomes in student learning has led to continued pressure and emphasis on what teachers do when students are in the classroom. Most efforts at improving instruction and learning are aimed at improving the visible tools of teaching such as teaching techniques and strategies, curricula, and materials. Little or no effort has been put into improving instructional planning and deliberation, which, in our opinion, constitute the core of teaching as a profession.

Sadly enough, the ignoring of this key aspect of teaching behavior is not only true of the public but of many teacher educators and teachers themselves. One of the most exciting implications of research on teacher planning is the potential for highlighting the importance of planning as a professional activity for teachers, and for reviving public opinion about the true professionalism of teaching.

Finding 1. Planning is plural, important, and invisible. In our surveys, interviews, and observation, teachers all agreed that they do a great deal of different types of planning. Planning is *plural*, planning is *important* to them, and planning is generally *invisible* to everyone else. Our survey results show that elementary-school teachers spend an average of about 12 hours per week planning for instruction, including five hours per week planning for reading and language arts, 2.25 hours per week for math, 1.7 hours per week for social studies, and 1.4 hours per week for science. In addition to lesson planning, the teachers listed daily planning, weekly planning, term planning, unit planning, yearly planning, and planning for special events (e.g., school open house, parent conferences) as different types or varieties of teacher planning. All these types of planning are important to teachers (although teachers most frequently said that *weekly* planning was of primary importance), and they all take time. If this set of findings is true, what lessons can be drawn from them?

First, in preservice preparation, teacher educators should pay more attention to the many different types of planning. The emphasis in most undergraduate training programs is on lesson planning and, perhaps, unit planning. But prospective teachers need to experience the full range of

teacher planning and the challenge of making the many tradeoffs, adjustments, and fine tunings of their plans that are inevitably necessary in the partially unpredictable world of the classroom.

For experienced practicing teachers, our first finding implies that administrators should allow more time and provide more support for teacher planning. Planning is the lifeblood of enthusiastic and well organized teaching, and most of it seems to be coming out of the hides of teachers. Some inservice days or half-days should be set aside for individual and group teacher planning instead of for lectures from visiting experts. And, most of all, uninterrupted planning must be recognized as a legitimate and respected way to spend "company time." If planning is truly at the core of teachers' professional lives, then it should receive a higher priority for support than it typically does. This issue is one on which teachers, administrators, and union officials can all join hands in mutual self-interest. More time and support for planning will pay dividends in more effective and better organized teaching, higher morale, and better use of expensive curriculum resources and materials.

Finding 2. Planning in practice differs from traditional prescriptions for planning. Our second finding is that experienced teachers do not follow the so-called Tyler or linear model of planning in which the planner begins with a specific learning objective, generates alternative ways to meet that objective, and chooses the best alternative. This is the way that teachers are taught to plan, but it simply does not describe what actually takes place. In our experience, teachers

typically begin with an idea for an activity. This idea is elaborated and adapted to fit the time available, student and teacher interests, resources on hand, and so forth. It is only at this late point in the planning process that teachers are comfortable with predicting what specific skills and processes their students may learn by doing this activity. There is much more emphasis on smooth execution of the process and on full participation by all students than there is on mastery of behavioral objectives. And it is practically unheard of for a teacher to spend time developing several different activities for the sake of choosing the "best" one and rejecting the others.

If this finding is true, what can be learned from it? One implication is that there are legitimately different approaches to planning for teaching. Toomey's research (1978) also supports this point. The approach that we have just described as typical of experienced practicing teachers seems to fit well with the demands and constraints of life in classrooms. Teacher planning is preparation for organizing and carrying off a complex series of social interactions, replete with uncertainty. We believe that the demands of the art and science of teaching have shaped teacher planning to produce a variation that is adaptive. Rather than try to impose a single logical (but possibly impractical) model of planning on teachers, we should acknowledge, support, and teach prospective teachers that there is more than one way to plan, that planning should be compatible with the situation in which it occurs, and that the sun does not rise and set on behavioral objectives.

Finding 3. Planning during the first weeks of school has long-term effects. Part of one of our studies of teacher planning involved interviewing five elementary school teachers and observing in their

classrooms during the first weeks of school (Clark & Elmore, Note 1). In brief, we learned that teacher planning is particularly important during the first few weeks of the school year. During September, a framework of rules, routines, schedules, expectations, and groupings of students is established that has far-reaching effects for the remainder of the school year. In addition to allocating time for and planning instruction in the various subject matters, teachers are concerned with planning for the physical environment of the classroom, assessment of students' knowledge and abilities, and with establishing a workable and constructive social system to serve as a foundation for instructional activities. Schedules, routines, new curricular materials, and groupings are pilot tested and adjusted during the first few weeks until, in early October, a reasonably workable system emerges. With minor modifications, this system characterizes the remainder of the school year. Other descriptive research supports this picture of the first weeks of school (e.g., Schultz & Florio, 1979; Yinger, Note 3; Buckley & Cooper, Note 7; Tickunoff & Ward, Note 8; Anderson & Evertson, Note 9).

If planning in the first weeks of school is so important, what does this mean for the teaching profession? One implication for teacher educators has to do with the practicum experience timing for student teachers. Typically, student teachers enter the classroom after "things have settled down." This prevents them from observing and partaking in the first weeks of planning, which may largely determine the character of the classroom. The typical practicum experience provides some training in operating the classroom system in a steady state, after almost all of the structural properties of the classroom

have crystalized. How much more challenging and professionally relevant it would be to train prospective teachers in planning, organizing, and getting the year off to a good start. In cases in which actual field experience in planning and organizing the first weeks of school is not possible for preservice candidates, simulation exercises could be developed that provide some training and practice in this important domain of professional activity.

Practice in planning and organizing the first weeks of school becomes especially important if the notion that the school and its programs should reflect and be responsive to the values, cultural background, and social milieu of the community of which it is a part is taken seriously. This suggests that new teachers at a school should spend at least some part of the late summer getting to know the community, visiting the homes of their prospective students, and grounding their instructional and social system decisions in the reality of the larger community in which their students live.

Another suggestion that follows from what we have learned about planning during the first weeks of school is addressed to school administrators. Limited time, interruptions, and unexpected schedule changes are difficult enough to cope with during the later parts of the school year. But, during the first weeks of school, these constraints and intrusions can easily make a shambles of teacher planning and classroom organization. Administrators should protect their teachers as much as possible from changes and demands that, while seemingly trivial, might upset the

delicate balance that teachers are trying to establish in September. Postpone that open house, minimize public address system announcements, and please don't change the times for lunch or special area classes.

Finding time for careful planning is always a challenge, but it is especially so at the beginning of the year. Is there any way to bring teachers back on the payroll sooner than the typical two or three days before the students arrive? Even one more day, devoted mainly to planning, would help a great deal in making the most of a very difficult time. Teachers and students are likely to reap the dividends of such an investment for the whole school year.

Finding 4. Teacher planning transforms curriculum into instruction. One of the last questions on our Teacher Planning Survey is "what purposes does planning serve for you?" We received many fascinating answers to this question that suggest a strong link between planning and curriculum. For example, teachers reported that they plan in order to learn the subject matter themselves, to prepare or acquire needed curricular materials, and to make decisions about the content, pace, sequence, completeness, and clarity of the curricular materials they have to work with. The most frequently mentioned resources used in teacher planning were teacher's guides, teacher's editions of student textbooks, and student texts themselves. In short, much of teacher planning for instruction is an attempt to answer the two-part question "What do I have to work with and how can I best present it to my students?"

In our interview study, all five teachers happened to be implementing at least one new curriculum at the beginning of the interview period. Two of the teachers delayed their implementation of a new math curriculum for up to five weeks because they were awaiting an inservice workshop on how

to use the new curriculum. The other three teachers began to use their new curricula very conservatively, following the teacher's guide meticulously and with almost no adaptation of the curriculum to the uniqueness of their students and classrooms. Given the circumstances of no prior experience with the curricula and a sense of urgency about getting started on academic activities, these teachers behaved in a reasonable way. But the situation could have been considerably improved if the new curricula had been comprehensively introduced, "walked through," and analyzed by the teachers during the previous spring. The teachers would have been able to adapt the new curricula to the characteristics of their students and other circumstances peculiar to their classrooms rather than sit and wait or implement without adaptation.[3]

Finding 5. Routines can increase teacher efficiency and flexibility. The complexity and unpredictability that characterize the teaching environment impose many demands on the teacher, and it is therefore necessary to find methods to decrease the amount of information to be processed at any one time. One method we found teachers use to cope with these demands is to develop routines. The routinization of action fixes certain aspects of behavior and thus reduces the amount of information that must be evaluated, decided upon, and manipulated. Since most planning must necessarily take place on the teacher's time--before and after school and

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[3]This recommendation is consistent with the research and writings of teacher educator and curriculum theorist Miriam Ben-Peretz (1975) of the University of Hiafa, Israel. She argues that teachers should be trained and supported to analyze, take apart, reorganize, and reassemble curriculum materials, both to permit adaptation to fit their own unique circumstances and to give them a feeling of curriculum ownership, rather than the feeling that they are mere technicians executing someone else's plan.

in the evenings or on weekends--and since planning competes with other activities for this time, the use of routines reduces the time and energy expended for planning, thus freeing time and energy for other activities.

Often the word "routine" carries with it a negative connotation of inflexibility. Our findings suggest that routines can be effectively used in the classroom to improve and simplify both planning and teaching. Routines can simplify the planning task by reducing the need to plan each new activity from "square one." Routines can increase the effectiveness of in-class time by increasing the stability of activities and reducing time lost to interruptions. They can also increase student time on task by increasing the predictability of activities and possibly reducing the students' anxiety about what will happen next and what will be expected of them. It is likely that routines are a common tool of experienced teachers, but few educators encourage their use to preservice teachers. We suggest that teacher educators should make students aware of the potential benefits of using routines, while at the same time warning of the dangers of rigidly relying upon them.

Finding 6. Communicating plans puts thought into action. Our research on teacher planning has made us think about the link between the plan and the subsequent classroom interaction. This link seems to be the teacher's communication of the plan to his or her students. No matter how elaborate and complete a plan may be, it cannot be carried out successfully unless the students are brought rather fully into the knowledge of what to do and how to do it, and brought to a commitment to cooperate in the process. Planning itself is given inadequate attention in preservice and inservice teacher preparation, but usually is addressed at some level;

communication of plans to students is almost never addressed. Yet success or failure of this link between thought and action can make a substantial difference between whether a plan is merely a grandiose entry in a plan book, or becomes the description of a lesson or activity well executed.

Communication of teacher plans (or the absence of communication) is particularly important at times of transition between activities and subject matters. And communication of a plan need not be simply oral. Part of this communication can take the form of materials organized by the teacher, diagrams, routine configurations such as reading groups, and even pantomime. But the essence of our recommendation is that the more imaginative the thought invested in communication of teacher plans to students, the more likely those plans are to come to fruition without undue confusion, delay, or backtracking. Training exercises could be created for both experienced teachers and preservice candidates in which they create and practice delivering the communication of a plan in several different ways, and obtain feedback on the clarity, motivational quality, and completeness of these communications. (Incidentally, we have noticed that teachers in a team-teaching situation are usually more explicit in communicating their plans than teachers in self-contained classrooms. This is probably because team teaching often requires more precise coordination and timing in order to orchestrate the activities of the teachers and students.)

Although we believe that communication of the plan is important, we do not want to leave the impression that the criterion for good planning is that the teaching match the planning exactly. On the contrary, our research indicates that many experienced teachers create elaborate plans, communicate them clearly and completely, and then feel free to depart from

them if a better idea or opportunity unexpectedly presents itself. Planning is important in getting off to a good start, but these teachers do not become slaves to their own plans. They stay alert for ways to build on a good start that incorporates students' interests, needs, and moods. These same people, reflecting back to their first year or two of teaching, told us that they were then much more likely to be slaves to their plans and miss unpredictable or unexpected learning opportunities as a result.

Finding 7. Teacher reflection aids teacher development. In two of our studies we asked teachers to keep a journal or diary describing their thinking and planning on a day-to-day basis. We also met with these teachers each week to go over their journal entries and have them explain and elaborate them where appropriate. While we learned many important and interesting things about their planning from these journals and conversations, this last finding has to do with the apparent effects on the teachers of keeping a reflective planning journal.

The process of journal keeping was a powerful experience for the teachers who undertook it. They reported that they learned a great deal about their own thinking and teaching. Until asked to keep a detailed report of their planning, they did not realize how much thought and energy they put into planning for instruction. In a sense, they were newly appreciating themselves as professionals. Until this time, the teachers' activities that are most like those of physicians, lawyers, and other professionals were largely hidden from view. Their morale seemed to improve as they became aware of this and other things. But more importantly, these teachers became researchers on their own teaching--alert to the many opportunities teachers have to take responsibility for their own continued pro-

fessional development--and to gradually and systematically improve the effectiveness of their teaching and the quality of life in their classrooms.

Certainly not every teacher would respond so dramatically to the experience of reflective journal keeping. But journal keeping, peer interviewing, and other techniques for helping teachers to reflect systematically on *what* they and their students are doing and *why* they are doing it constitute potentially powerful and inexpensive components of an inservice professional development program.

Conclusion

We have only begun to answer the many questions that we and others have raised about the hidden world of teaching: about the how, the what, and the why of teacher planning, and about the relationships between planning and action in the classroom. This is our first derivation of implications for teaching and teacher education. We are at once confident that these suggestions make sense to practitioners and aware that these ideas will be challenging to implement. Obviously more research is indicated--not only basic research of the sort that we have begun, but also research in the context of teacher education and applied action research of the sort that a principal, a faculty, or a single teacher can use to explore, reflect on, and improve the quality of thought and action in schools. We are in no immediate danger of exhausting the secrets of the hidden world of teaching.

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